THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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THE INAUGURAL ADDRESS AT CAMDEN TOWN.

The Camden Town School opened its doors on Monday last, when those who attended—including a larger number of visitors than usual—heard a very interesting address. As might have been expected, Mr. Stockman made many references to his own branch of veterinary work—preventive medicine, but he also devoted much attention to veterinary education, and in this respect the paper departs a little from the beaten track. Usually such addresses, so far as they relate to instruction at all, are largely concerned with that of the still unqualified student. This one is mainly taken up with the wider question of post-graduate study. More methods than one of pursuing this, as Mr. Stockman pointed out, are open to the veterinarian. One or two are only recent acquisitions; others are of older standing; but scarcely one is yet fully appreciated by the profession.

A set post-graduate course, such as the now famous one at Camden Town, is the method that will probably always attract most qualified students. So far these courses have been confined to veterinary pathology and sanitary science, but there is no reason why similar courses, including medicine and surgery, should not be instituted for the benefit of practising clinicians. Mr. Stockman, however, dwelt at some length upon an older method of post-graduate study which has much to commend it—an independent and largely self-directed course at any large veterinary college. We could name well-known veterinarians who have done this with the best results, long before post-graduate classes were instituted; and one of its great advantages is that the periods and subjects of study alike can be modelled to meet the individual case. This feature will always commend it to the serious student, who will probably find this method the best of all.

Mr. Stockman mentioned one other post-graduate facility which is only just opening to our profession—research scholarships to enable men to train as investigators. Thanks to the Board of Agriculture, a good number of such scholarships are now to be open to veterinary graduates; and some of our younger men may be trusted to obtain distinction in them.

Mr. Stockman takes a roseate view of veterinary work as a whole: but there is no doubt that he is right in saying that the prospects it offers to those who choose its preventive and research side were never so bright as at present. Some of our old functions are undoubtedly declining. This new one, although it is already absorbing many of best graduates, is only begining to open to us.

VETERINARY WORK IN THE PUNJAB.

The Annual Report of the Punjab Veterinary College and the Civil Veterinary Department, Punjab, for the year 1910-11, is, unfortunately, shorter than usual. For some reason it has been ordered that its text should be reduced from that of former years; although the work it concerns is expanding, and the publication really comprises two separate reports of different institutions. That of the Punjab Veterinary College, of which Major Smith is Principal, has been written by Mr. S. H. Gaiger, I.C.V.D., the Officiating Principal; that of the Civil Veterinary Department is by Mr. V. de V. H. Woodley, its Chief Superintendent; while a note upon both by the Director of Agriculture precedes them.

The Punjab College is on the eve of a great change. Government has decided that it shall be enlarged so as to serve as the sole veterinary college for all Northern India; but nothing has yet been settled regarding the details of the change. Plans of requirements are being prepared; and it may be hoped that a definite scheme may be adopted and set on foot during the present year. It seems most likely that this will take the form of building an entirely new and larger college upon a fresh site not far away from the present one.

In the meantime the work of the existing college is inevitably more or less unsatisfactory. The examiners' report lays stress upon the grievous overcrowding of students, instancing the fact that the anatomy class contained 77 men, while the dissecting room appears suitable for no more than 16 or 20. In fact, the College is reducing the numbers of its students in order to gain in teaching efficiency; and of course this will mean shortening the supply of native graduates, which already does not cope with the demand for them. There could be no clearer proof of the need for a larger college and staff.

Despite these disadvantages, the year's work seems to have been very good. All things considered, the examination results certainly are so; while some important research work, which will be reported upon separately, has been done during the period. This includes the discovery of a new form of Indian bovine trypanosomiasis, which is only demonstrable by cultural methods; and of a form of canine piroplasmosis which is unaccompanied by jaundice, is unaffected by the tryplanblau treatment, and is therefore possibly due to a new species of piroplasm.

Mr. Woodley's report of the Civil Veterinary Department is also very satisfactory in many respects, perhaps most of all in its evidence of the success of

the local veterinary hospitals. During the year under report there were 102 of these in the province, as against 94 in the previous year, and their attendances show marked increase. "The average daily attendance at each hospital works out at 16, and the average daily admission of fresh cases 7·5; the figures for last year being 12·95 and 5·8 respectively." These figures speak for themselves.

Breeding operations continue to make headway, if somewhat slowly; while there is a great reduction in most of the animal epidemics. Altogether, during the year, only 217,823 cases of epidemic disease were reported, against 337,146 the year before. Foot-and-mouth disease in particular has decreased enormously, only 83,960 cases being reported against 247,423 for the previous year.

Most of the other epidemics also show more or less reduction, with the very important exception of rinderpest, which has risen greatly. During the year 99,126 cases of rinderpest were reported, against 48,226 for the year before. Fortunately it has been possible to greatly increase the number of preventive inoculations upon in-contact animals; 102,603 have been inoculated, against 43,250 last year, and only 300 deaths occurred after inoculation. Native opposition to inoculation, though still marked in some districts, is evidentiy subsiding; and the results of this year's inoculations will certainly weaken it still more.

The result of the whole year's work goes to show that the Veterinary College and Civil Veterinary Department of the Punjab, both alike, undermanned, and handicapped in many other directions, are both rendering invaluable service to the agriculture of the province, The work of both is expanding rapidly; and we are glad that facilities for expansion are at last to be given to the College. Such facilities are also being given to the Veterinary Department, but these seem insufficient for its growth. Eight veterinary assistants were added to its staff during the year under report; but during that period the work evidently increased so much that more must now be necessary.

TETANUS SUCCESSFULLY TREATED WITH MAGNESIUM SULPHATE.

By W. A. Dykins, M.R.C.V.S.,
Government Veterinary Surgeon, Umtata, S.A.

Having recently read in *The Journal of Comparative Pathology and Therapeutics* an article by Capt. W. O. Dawson, A.V.C., on results obtained from the above treatment, I was fortunate in meeting a case of tetanus shortly afterwards, and applied the same treatment with good results.

During a visit to Port St. John's, which is one of our sub-districts, the Government Stock Inspector informed me of a beast sick at a trading station twelve miles from the village, the malady he diagnosed as lockjaw. I immediately instructed him to proceed there and apply the treatment.

I arrived at the station two days later and confirmed his diagnosis.

History.—The heifer calved on the 14th of August normally, but retained the cleansing for a few days, which was afterwards removed by the natives, who had some difficulty, and ignored antiseptic precautions. She had been noticed sick about seven days before my arrival, and had had two injections of Mag. sulph.

Symptoms.—The beast was standing in a kraal, exhibiting great distress and assuming a rigid posture, its head extended, and its tail straightened and slightly elevated. Great weakness was noticed; animal would lie down and unable to rise without assistance. Trismus had been severe, but showed improvement, muscles of neck, chest, loins, and limbs showed tonic spasms, and were very tense. The nostrils dilated, and the protrusion of the membrana nictitans over the eyeball was exceptionally well marked. Animal showed accentuated reflexes. Breathing and pulse accelerated, temperature normal, obstinate constipation was observed.

Treatment.—The beast was allowed to remain in kraal, as there was no building or shed available. Up to the present she had received 2lb. of salts from the owner, and two subcutaneous injections of a saturated solution of Mag. sulph. 40 c.c. daily (20 c.c. on each side of neck). These injections were continued for a few days later. I had a letter from the Stock Inspector on September 5th informing me that the beast was making an excellent recovery, feeding well and able to walk about.

As tetanus is somewhat prevalent in this district, and the mortality high, I hope to be able to put this treatment to a more thorough test in the future.

DIGESTIVE DISEASES OF RUMINANTS.

It is not because I have any desire to pose as an authority on the diseases of the stomachs of ruminants that I venture to put on paper a few thoughts in reply to Mr. Hoare's questions contained in your issue of the 26th August last, but that the subject is very interesting, and cases are often very puzzling, if one endeavours to arrive at anything like an accurate diagnosis.

Does impaction of the omasum occur as a disease *per se?* I do not think that impaction of this stomach does take place as a distinct disease – if by impaction is meant the over distension of the stomach with food, whether in a moist or dry state: but I do not accept the idea that this stomach is never affected with disease except as the result of disease affecting the other stomachs. I believe it is subject to primary disease and nearly as frequently as the others, only to describe the commonest disease of this stomach accurately it should be named desiccation of the contents of the omasum.

The situation of this stomach in the ox renders it peculiarly liable to such a condition; the greater, if not the whole bulk of this stomach is situated above its entrance and exit, so that to keep its contents moist liquid must travel, or be forced, more or less uphill. When this stops from any cause, or the supply of liquid is cut off, the tendency will be

for the liquid that is present between the leaves to drain away, and unless the walls of the stomach happen to be paralysed, this will be materially assisted by the normal contractions of the organ.

Is not this stomach's separate nerve supply an endeavour to throw it out of gear as much as possible with the other stomachs, and so render it less liable to be influenced by their diseases, since its own structure and situation render it so liable to disease itself?

Impaction of the omasum is not always associated with brain symptoms, and should not be called stomach staggers. Stomach staggers is a symptom of the absorption of some poison produced in the stomachs during the process of digestion, or decomposition, of certain foods, and may be associated with desiccation of the omasal contents, or with gastritis.

Causes.—Sudden change on to very succulent food produces it by stimulating the walls of the stomachs to increased movements, which in the case of the third stomach tends to force the liquid contents of that stomach out, and also tends to draw more liquid from the third into the fourth stomach.

Seeds of over-ripe grasses cause it by being taken out of the rumen with the liquid overflowing from it, but as they carry little water in their structure, and, being hard allow the water surrounding them to percolate freely, they act as desiccants; some of them also produce poisons which have a paralysing effect on the stomach either through the local or central nerve supply.

Allowing cattle to lick dry meal without providing a sufficient supply of water causes it, because of the amount of fluid the meal absorbs. In a case of this kind the omasum may give one the impression that it is larger than normal from being impacted.

Systematic under watering will act as a cause.

Simple inertia of the stomach from the prolonged action of cold or any other disturbing factor might also produce it. It is occasionally produced by prolonged parturition; in this case it is due, I think, to the pressure exerted during the throes of labour pressing out the liquid contents of the stomach.

I would suggest that a slaughterhouse is not the best place to examine the stomachs of ruminants for normal conditions, as the animals there may have travelled long distances, and been deprived of both food and water for considerable lengths of time.

Symptoms.—If it arises as the result of sudden changes on to succulent food there is generally some diarrhœa to begin with, which is not very severe, and soon gives place to very obstinate constipation, unless attended to early. When it arises from dry feeding the animal is usually noticed by the attendant not to be quite so ready for its food as ordinarily for a day or two, and this ends with the animal by and by refusing all food, although the bowels appear to be acting normally. The illness about this time is generally attributed to the effects of a chill, since the animal is dull, the coat more or less staring, possibly an occasional slight quiver about the flank, and a slight quickening of the respiration may be seen. There is no grunt. A careful examination reveals that the first stomach is a little more sluggish in its movements than normal, and that there are no sounds, or only very faint ones, over the seat of the third and fourth stomachs. If a dose of medicine be given at this stage, it will be found that before it has time to act all motion from the bowels will have ceased for a matter of twelve hours or so. If no medicine be given about the time indicated, but its administration is delayed, as it very often is, for another twelve hours, there is then no motion from the bowels, no movement at all in the third and fourth stomachs, although the rumen is still acting; there is a grunt, more or less frequent and more or less painful according to the condition of the patient, and some restlessness due to abdominal pain. The grunt is always most evident when the animal is lying, and it may be so slight, when the animal is standing, as to be audible only when the ear is applied to the side.

There are also the usual signs of ill-health; uneven surface temperature, eye dull, conjunctival vessels a little injected, muzzle dry: the pulse is not much disturbed at first, unless in cases beginning with diarrhœa, but afterwards becomes frequent and faster than normal, but remains soft until the onset of inflammation; the temperature at first is normal, and remains so, or rises very little until inflammation sets in. When brain symptoms become manifest, you may get almost any nervous symptom shown, or the whole list of them may be gone through, to terminate in death either in coma or delirium. Once the contents of the omasum have become thoroughly desiccated, I do not think any medicine will soften them, or only in very exceptional cases, and should purgatives simply cause watery evacuations the case is generally hopeless, and the administration of large doses of purgatives worse than useless.

Gastritis. Gastritis is often the result of unrelieved desiccation of the omasum, and of overdosing with purgatives to overcome that condition, but it also arises as an independent affection, from causes which, in other subjects, would produce the previous disease, such as any sudden change of food, and the greater the change in the food the more liable is this disease to result; all irritants produce it, if taken in sufficient doses.

Symptoms. These are always severe, but unless there is desiccation of the contents of the omasum, or some other obstruction to the passage of the contents of the anterior stomachs, gastritis or gastro-enteritis is, I think, always associated with diarrhœa, and the more severe the inflammation the worse is the diarrhœa, until it becomes dysenteric, and towards the end nothing may be passed but mucus and blood.

The advent of gastritis, while attending a case of desiccation of the omasum, is heralded by a sudden change for the worse in all the symptoms shown by the animal, and even here diarrhœa may arise.

There is evidence of great abdominal pain, from the restlessness of the animal, almost up to the

time that the recumbent position is assumed from exhaustion, there is constant moaning—more than grunting; the eyes are sunk in the orbits, dull and listless, the belly becomes tucked up, and there is pain on pressure over the right hypochondrium—pressure here causes a painful grunt. There is grinding of the teeth. Fever is always present until near the end, and the pulse is frequent, small, and hard (wiry), the breathing is accelerated, and latterly the breathing becomes oral, more especially during expiration.

Impaction of the rumen. Cases of this disorder which recover do so, not so much from the direct action of the purgatives on the contents of the rumen as from their action on the other stomachs and bowels, keeping them in working order. The stimulants, which are also given in this disease, materially assist by acting on the rumen through the nerve supply. However, recovery is mainly due to the food in the rumen undergoing some form or other of digestion or fermentation, which reduces its bulk, by rendering some of it soluble, and enabling it to be removed in the liquid that is always passing from the rumen into the other compartments. The most reduced particles of the coarser food also get conveyed onwards with the liquid, and in some cases it is really wonderful what coarse material passes through the digestive canal before rumination is satisfactorily re-established. I do not think that the whole of the food partaken of by a cow at any time is put through the process of rumination, but only the coarsest particles of it; the larger part is sifted out between the rumen and reticulum, and passed on to the omasum without being ruminated at all.

Constipation of the bowels. From what is published in veterinary literature, one is almost led to believe that that the only form of constipation which affects ruminants is that which is connected with their stomachs, and that there is no constipation connected with their bowels. Milch cows, at any rate, are subject to constipation of the bowels, which is associated with some functional derangement of the liver, during the latter part of writer and the early spring.

It appears to be due to changes in the food which occur about this time. The supply of roots fails or the roots become deprived of a part of their natural moisture and get very indigestible, and various additions are made to the food to compensate for these things, in an endeavour to keep up the supply of milk.

The animal is noticed to become gradually constipated in the bowels, the fæces become drier and drier, and more coated with mucus until the animal shows diminished appetite and reduced yield of milk; then the fæces are noticed to be scanty, and the urine high coloured; the extremities colder than normal, and rumination more or less suspended.

If the animal is not attended to now, the appetite fails entirely, defæcation and rumination cease altogether, and the milk yield stops; colicky pains put in an appearance—if they have not been manifest before—the animal lying down and rising frequently, and kicking at its belly with the hind feet; lumps of yellowish-white mucus pass from the bowels, but movement in the stomachs never entirely stops.

The pulse is not altered at the beginning but when the disease has advanced to the point of diminishing the milk yield, it is often less frequent than normal, and slow, but quite full; the temperature is not altered any as a rule, but may be slightly below the average, while the mucous membranes and skin are tinged more or less yellow. Except colic be present, the respirations are not interfered with.

In this disease it is not difficult to get a reaction to purgatives, and once the bowels are opened the appetite improves immediately; but the constipation is very apt to return in a day or two, when the same set of symptoms become manifest. To prevent this a course of laxatives, with liver stimulants and tonics is necessary, together with an entire change of diet, if this can be attained at the season of the year when the disease appears. These cases sometimes take quite a long time before the natural functions are throughly restored.

PETER WILSON.

Lanark. Sept. 27.

ABDOMINAL COMPLAINTS.

By W. TART, M.R.C.V.S., Stoke-on-Trent.

I have been much interested in reading the various articles and letters on abdominal complaints of cattle, which have appeared lately in *The Record*. The article by Mr. Hugh Begg has been especially interesting to me. I am tempted, with much diffidence, to describe my own experiences with somewhat similar cases.

During the last ten years, as I usually pass a country knacker's yard on my daily round, I have made a rule of examining post-mortem the majority of cattle (chiefly milch cows) which have died under my treatment.

My clients, too, are very apt to regard the cases exhibiting such a train of symptoms as described by Mr. Begg, as occasioned by impaction of the omasum, and to treat them with a strong purgative, usually salts and treacle.

I must say that, although I have examined scores of cases I have never yet met a case in which I could definitely say death was due to impaction of the omasum. Further, I do not think that in any one of the cases did the trouble arise primarily in the omasum.

Putting aside those cases due to penetration of the stomach wall by a foreign body (which are fairly common in this district) I have found the most general causes to be

(*a*) Inflammation of the abomasum, sometimes affecting to some slight extent the other stomachs, and often extending to the bowels.

(*b*) Peritonitis, general or localised.

Those cases due to (*a*) I have found most common (although by no means confined to them) on a number of farms which border closely on collieries

and furnaces. On these farms the cattle generally do very badly, seldom lasting more than four or five years after the first calving. They are very liable to digestive troubles, arising, in my opinion, from the ingestion of mineral matter deposited on the grass from the smoke. I find that they almost invariably die if treated with drastic purgatives. They do much better after a mild aperient, followed by internal antiseptics, carminatives, etc. The post-mortem symptoms are those of gastro-enteritis.

I have been very sceptical as to peritonitis arising from chills to the abdomen. But I am inclined to change my opinion, as during the last few weeks, since the breaking up of the fine weather, I have had a number of cases which I have regarded as due to peritonitis, to which I am unable to assign any other cause. In some of these cases, in addition to the symptoms described by Mr. Begg, there was flatulence not of the rumen but of the abdominal cavity. The gas being in the abdomen itself, and the mass of the rumen easily felt a distance from the wall of the abdomen.

I will eliminate the cases which recovered, as the diagnosis may be open to doubt, and describe two typical cases which are fresh in my memory.

1. *Subject.*—Blue cow, had first calf a couple of months ago, was in moderate condition. She was noticed to be ill and shivery. The owner administered a purgative and sent for me the following day. I found her to be very depressed, eyes sunken, temperature 104, pulse frequent and thready, fæces scanty but sloppy, abdomen tense, appetite entirely absent, not very thirsty, milk gone, grunting with every breath.

Diagnosis.—Peritonitis, with a saving clause that it might be "wire."

Treatment.—Quinine, digitalis, opium, calomel in hot beer three times a day. Gruel at frequent intervals. Had her well rugged up and kept warm. She died in a few days.

Examination post-mortem showed peritonitis (apparently not septic) more marked in the region of the diaphragm. Pleura and thoracic organs normal except the one lung congested on the side she had lain before death. A careful search for a foreign body was useless.

2. *Subject.*—Shorthorn cow, rather poor, had calved four months.

Symptoms.—As in former case, but grunting very heavily, abdomen very flatulent, temperature 105.

Treatment similar to first case. She too had had a purgative. Applied hot cloths to abdomen. On second visit she was clearly moribund, to satisfy owner I inserted a short trocar and canula and a quantity of gas escaped, but not so much as is usual in tympanitis of the rumen. I could feel that the instrument was not in the rumen. She died on the 3rd day.

Post-mortem showed severe septic peritonitis, both parietal and visceral, with a very considerable amount of fluid in the abdomen. The pleura was slightly reddened, lungs congested, no fluid in chest. After a most careful search (the owner was present) I failed to find any trace of a foreign body.

These cases arose suddenly, and if not due to chills I do not know to what cause to ascribe them. It may be, as Captain Rainey suggests, in his letter published in the issue of the 16th inst., they are caused by infection from the intestinal tract without a puncture. But they arose very suddenly and were ushered in by shivering and symptoms of a chill.

The most interesting symptom to me is the flatulence of the abdomen, usually regarded as an almost certain symptom of "wire."

A VICTIM OF QUACKERY.

A well-grown male cat, about six months old, was brought to our infirmary by its owner, who stated that four days previously it had been castrated, but he was afraid it had not been properly done. Examination of the patient showed his fears to have been well founded.

The method of castration adopted was simply to cut off the lower portion of the scrotal sac: with what object it is difficult to imagine, unless it was surmised that the testicles would fall out. On examination it was found that both testicles had descended, one to about half an inch and the other about three-quarters of an inch below the scrotal incision. They were considerably swollen and suppurating freely. Both cords were thickened and united together, and to the edges of the wound by numerous adhesions. The cat was very "mopey," and was stated to have partaken of no food since the "operation."

The adhesions were dissected away and the cords separated, but owing to their inflamed and thickened condition it was considered inadvisable to remove the testicles by the usual method of drawing. A ligature of soluble gut was placed round each cord, the testicles snipped off, and the wound thoroughly cleansed.

Next day the cat fed greedily, the wound healed without any further attention, and he was sent home in four days time.

"Erin."

PROLONGED RETENTION OF FŒTUS.

During April of last year I was asked to attend at the parturition of a rather valuable Jersey cow, which had the previous year given birth to her first calf in an uneventful manner.

At the first visit there was no signs of immediate calving, but when attending about ten days later the usual symptoms were evident—enlarged udder, altered pelvis, etc.

The attendants and myself could feel the calf (or thought we could) on pressure of the right side, but after paying several visits to the cow it was a surprise to find parturition no nearer, and the signs of its approach were now less marked than before. There was no discharge from the womb, and the cow's general health was normal.

A week ago, eighteen months after the date due for calving, I was called again to see this cow. She

appeared in some pain and not in good health—a discharge like dirty mustard was coming from the vagina, and the attendant informed me that about a gallon of this material had been passed. Next day a fœtus was expelled having the appearance of one carried about five months *in utero*.

It is, I know, not uncommon on post-mortem examination to find a mummified fœtus in the womb of supposed "empty" cows, but the above phenomena are surely unusual.

It is certain that the last date of service was July 6th, 1909.

J. H. Ripley.

Hurst Green, Sussex.

ABSTRACTS FROM FOREIGN JOURNALS.

The Temperature in Quarter-Ill.

It will be remembered that, some time ago, several European veterinarians published clinical observations which certainly seemed to throw doubt upon the classic view that a high temperature is associated with quarter-ill. Major F. S. H. Baldrey, F.R.C.V.S., D.V.H., I.C.V.D., has gone into this question at Muktesar, and has published his results in *The Indian Veterinary Journal*.

Maj. Baldrey's observations were made under peculiarly advantageous conditions. At Muktesar, a considerable number of animals suffering from quarter-ill are carefully observed; and the course of the temperature can therefore be followed with far greater accuracy than is usually possible in ordinary practice, where the temperature takings are necessarily few and irregular. Major Baldrey observed 21 animals in all; and in 3 of these the temperature was taken every two hours, while in the others it was taken morning and evening. The conclusion he draws is "that in black-quarter there is usually at some place in the course of the disease a high temperature, but to the ordinary clinician the absence of this would not be remarkable." If the temperature were taken every hour, he thinks it very possible that every case would show a high temperature at some period in its course. The temperature, however, varies from hour to hour, as three cases in which it was taken every two hours show. It commences to fall very rapidly immediately after reaching its highest point, and becomes very low just before death—sometimes descending to even 94° F.

Major Baldrey's 21 charts also show that the most acute cases are the least likely to show very high temperatures. In the more chronic cases which extend over a time of from two to three days, there is always a highly febrile period; while in very acute cases collapse seems to supervene almost at once, and the temperature quickly runs down until death.

These observations are so much more complete than the majority of those which are found possible in practice that they deserve to be widely known. Probably they represent the truth of the matter, especially as they amplify and corroborate, rather than clash with, the results reported by others. They explain how it is that some practitioners have found normal or sub-normal temperatures so often as to conclude that quarter-ill is not a febrile disease. The truth appears to be that the disease is a febrile one, but the fever may be of such short duration that its absence is of no great diagnostic importance.

Primary Giant-Celled Sarcoma of the Horse's Spleen and its Constitutional Results.

Edward Nyiri, of Budapest, records *(Allatorvosi Lapok)* the following pathological observation. A horse's spleen, measuring 52 centimetres (20 4-5th inches) long by 28 centimetres (11 1-5th inches) thick, and weighing 7,260 grammes (roughly about 16 pounds) was sent to the Budapest Veterinary School for examination. The horse from which the spleen had been taken had been extremely emaciated, but no pathological lesions had been demonstrable except in this single organ.

The surface of the spleen showed numerous roundish protuberances, ranging from the size of a bean to that of a child's head. When incised, the cut surfaces of these swellings showed grey-red spots, while the cut surface of the spleen appeared brown-red.

Microscopic sections cut from these swellings stained unequally, and some portions remained quite uncoloured. The capillaries were greatly dilated. The cellular substances of the swellings showed two kinds of cells. Cells of the one kind were larger than ordinary lymphocytes, and possessed a nucleus which was poor in chromatin and was surrounded by a broad zone of protoplasm. Cells of the second variety showed only a very thin streak of protoplasm, and their nuclei were rich in chromatin and showed different forms of division. In much smaller number and only at isolated places larger cells were noticed, the protoplasm of which stained dark red with hæmotoxylin-eosin and showed smaller roundish unstained portions (vacuoles). The nuclei in these large cells were rich in chromatin, and two or several nuclei of round, oval, or elongated shape, could be counted in one cell. Lastly, in isolated groups, eosinophilous cells were noticed, the nuclei of these being poor in chromatin and small. The ground substances of the tumours consisted of connective tissue, which was rich in blood.

The microscopic findings, therefore, indicated that the tumour was a lympho-sarcoma or lymphocytoma containing giant cells. The neoplasm arose from the malpighian follicles, and the author ascribes a two-fold action in causing the emaciation of the horse to its agency. In the first place, its growth had caused a permanent pressure upon the neighbouring structures. In the second place, the toxic materials which arise in such cases had also played a part in causing marasmus.—*Berliner Tier. Woch.*

W. R. C.

BOARD OF AGRICULTURE AND FISHERIES,
4 WHITEHALL PLACE, LONDON, S.W.

October 3rd.

The Board of Agriculture and Fisheries desire to draw attention to the fact that in times of great prevalence of foot-and-mouth disease on the Continent there is a grave risk that the virus of the disease may be imported indirectly into Great Britain. During the nine months of the present year the infection of foot-and-mouth disease appears thus to have been imported on no less than five occasions, and inasmuch as the disease is still very prevalent on the Continent of Europe, it seems probable that the risk of its re-appearance in Great Britain will continue to exist for some time. The Board are gratefully cognizant of the valuable assistance they have received from the veterinary profession in the past, and they recognise the difficulty in which practitioners and inspectors are sometimes placed when suddenly called upon to decide promptly whether or not the disease is present, since, in spite of its exceedingly contagious character, it has recently appeared under circumstances in which no connection with a previous outbreak can be traced. Bearing in mind the great lapse of time since foot-and-mouth disease was generally prevalent in Great Britain, it must be the case that a considerable number of veterinary practitioners can have had little or no opportunity to become familiar with the disease in the course of their ordinary practice.

Having regard to the above circumstances, and to the fact that a delay of even a few hours in arriving at a diagnosis may be attended by the most unfortunate results, the Board venture to ask veterinary practitioners who may meet with symptoms in cattle, sheep, or pigs, which in the least suggest the existence of foot-and-mouth disease, to communicate their suspicions not only to the local authority, but also by telegram to the Board direct without avoidable delay, in the meantime taking all possible precautions against the spread of the disease by mediate contagion.

Where this is done the Board will at once instruct one of their Veterinary Officers to confer on the spot with the veterinary practitioner concerned.

ROYAL VETERINARY COLLEGE.

The Session was opened on Monday, October 2nd, at the College, Great College Street, Camden Town, N.W., Mr. W. Hunting occupying the chair. Amongst those present were Col. Duck, Profs. Wooldridge, Woodruff, Shave, and Almond, and Messrs. Banham, Carter, MacCormack, Rutherford, and Thatcher.

ADDRESS.

By STEWART STOCKMAN, F.R.C.V.S.

A customary remark from benevolent old gentlemen to small boys is, or at least used to be, "What are you going to be when you are a man?" As I do not wish you to look upon me as a benevolent old gentlemen, but rather as one who has gone a certain way along the professional road you are about to traverse, I promise not to treat you as children. Still, gentlemen, if you have not already done so, you must sooner or later ask yourselves what you are going to do when you are qualified, and this brings me to one part of the subject upon which I propose to address you, namely, post-graduate teaching, and post-graduate study. It may seem somewhat curious to address advice to men on post-graduate study before they have finished, and before some of them have even begun, their under-graduate course. The direction of the latter, however, is provided for by the system of professional education obtaining in this country, which requires students to attend a course of theoretical and practical instruction under teachers at recognised teaching institutions, and afterwards to pass through the ordeal of examination as a test of efficiency, thus compelling them to acquire a certain amount of knowledge before they can pass from one stage to another, and finally qualify. The course of study prescribed for intending graduates in veterinary medicine and surgery is, having regard to its purpose, as wide as that of other professions, but it must be remembered that the amount of knowledge which seems fair to insist upon the average student acquiring in a specified time is necessarily limited: therefore, a syllabus of examination is introduced. A teacher may or may not teach within the limits of this syllabus. He may even think it his duty to do so, but most students are likely to confine their more strenuous efforts within its boundaries, and they can hardly be blamed for this, since it increases their prospects of passing the examinations at the earliest date possible. The restricting influence of this system may be counteracted by prescribing a wider syllabus. That, however, means a longer period of undergraduate study, and as the majority of students, even the most enthusiastic, take up a profession with the object of making a livelihood by supplying a public want, it does not seem advisable that they should be too long debarred from practising their profession, should they desire to do so, nor that the expenses connected with their tuition should he disproportionate to the average income available from it.

Further, although it must be freely admitted that study and teaching up to a certain point expedite the acquisition of skill, which is an indispensable factor in the successful practice of the medical art in all its branches, and that they open up wider fields for its application after it has been acquired, no amount of learning and tuition without practice will make a man skilful in any branch of the medical profession. The minimum time a student should be asked to devote to the study of the multiple rudiments of a profession like medicine has given rise to frequent controversy, which for the present has resulted in the presiding bodies imposing a general curriculum of a comprehensive character, leaving the further pursuit of subjects now universally admitted to require special teaching to those who are able and disposed, to follow them. The universities and colleges have organised post-graduate teaching in connection with some of the subjects, and several medical colleges, exclusively devoted to post-graduate teaching, have recently come into existence.

Certain veterinary colleges in this country have made more or less provision for post-graduate teaching, and it is gratifying to know that the post-graduate course of the Royal Veterinary College, London, has acquired a unique reputation throughout the British Empire. Special degrees and diplomas are granted by the universities and colleges to those who have attended a course of post-graduate teaching, and passed further examinations. The Body presiding over veterinary education in this country, the Royal College of Veterinary Surgeons, has not yet seen its way to grant a post-graduate diploma, conditional to candidates following a special curriculum, and passing further examinations, but it has approved the principle, and has signified willingness to put the latter into practice, when its funds enable it to do so in a manner befitting its public responsibilities. It is to be observed, however, that the scope of these courses of study for post-graduate degrees and diplomas is necessarily limited, that a syllabus of examination is introduced, and that a pass standard is fixed: the students are still in the position of being taught, in *statu pupillari*. Yet, with all its defects the system has much

to recommend it, and it supplies organised teaching of a more advanced kind to formed classes of men who desire to become more proficient in certain subjects. Supplementary diplomas afford evidence of a desire on the part of the holders to obtain more than a bare qualification, the additional learning forms a broader basis for a future superstructure, and they have also a commercial value, something the possession of which professional etiquette allows you to advertise by placing letters after your name, something which at least receives consideration should you apply for a public appointment. I would advise you badly were I to dissuade you from post-graduate degrees and diplomas, but I would like to qualify this advice with a warning not to submit yourselves for too long a period of your lives, or at too mature an age, to those forms of instruction, which bear a resemblance to spoon-feeding. The most desirable kind of post-graduate degree would seem to be one which might be granted to aspirants after a suitable examination, or for original work submitted, in recognition of extensive knowledge and skill in specified subjects, which their powers of self-education have enabled them to acquire by practice and study several years after their days of tuition. But, gentlemen, a man may take many degrees or diplomas by tuition and examination, he may even become very learned, and yet be a comparatively useless person in a profession which is an art founded upon science, and it was not so much to post-graduate study by following a conventional curriculum and taking a diploma that I intended to draw your attention, as to that kind of education a man seek out for himself, and to a certain extent direct.

The position of the veterinary practitioner is the most difficult in this respect. Veterinary clinics and hospitals, where a large and varied number of medical and surgical cases can be seen daily, are only to be found at veterinary schools in very populous cities like London, Paris, Berlin, and Vienna—schools, moreover, which lay themselves out for clinical teaching. Further, the possession of a practice from which he dare not be long absent is an obstacle the practitioner cannot afford to disregard. Still, few men start general practice on their own account for some years after they have received the qualifying diploma, and those who are able to continue their studies will gain more knowledge of clinical medicine and surgery in six months by a well designed course of post-graduate study at one or more of the large veterinary schools, than they will acquire by years spent in general practice. The fees involved are almost negligible, the cost of living as a student in a foreign city is not great, and the expenses of travelling need not be prohibitive. A graduate might attend the clinic and post-mortem room, he might arrange to have the *entrée* to the chemical, physiological, and pathological laboratories, where he can receive direction in relation to the carrying out of chemical and physiological tests applicable to the body fluids and excretions, and be in a position to practise with material from the clinic, the bacteriological and other methods which can be made use of in practice, principally in connection with diagnosis and treatment. He will probably have to make the selection of his own cases, and collect his material, but that is more an advantage than a drawback.

Those who desire to become more proficient in matters relating to State veterinary medicine would be well advised to take out a course of instruction in the ordinary technique practised in pathological and bacteriological laboratories, and to follow this up by spending several months in one or more of these laboratories, assisting the staff, and learning from them by conversation and observation.

In dealing with the suppression of epizootics, prompt and accurate diagnosis is the starting point of everything which leads to success, and an error may lead to the most disastrous results, in some cases even to a national calamity. Further, a veterinary inspector, whether he serves under the central or local authorities, occupies a somewhat unique and very responsible position in relation to diagnosis. Under the Diseases of Animals Act of 1894, the certificate of a veterinary inspector is conclusive evidence in a court of law that disease exists, and practically every Order of the Board of Agriculture lays down that an official diagnosis in respect of all scheduled diseases is to be made by a veterinary surgeon occupying the position of veterinary inspector.

The veterinary surgeon, then, who intends to take up preventive medicine should not only extend his clinical experience of the contagious diseases of animals, but he should devote a good deal of his time in the laboratory to making himself acquainted with the technique and proper application of histological examination, and of those bacteriological methods which are of very considerable value in the diagnosis of bacterial diseases in their occult stages. The behaviour of the test animals of the laboratory towards the viruses of these diseases should also receive much attention. It is not suggested that technique alone will make a man an authority on veterinary sanitary science. It is obvious, of course, that he must also devote much study to the multiplicity of factors which operate in the dissemination of disease, and to methods of control and eradication ; that is, to those subjects which have been grouped under the heading of epizootiology. The best fields for educational efforts of this kind are again, the laboratories of the veterinary schools with large clinic and the laboratories of State departments. It is advisable that a portion of the period of study should be spent on the Continent, because a varied experience is of itself educative ; and it is necessary, if you wish to make the acquaintance of certain diseases which have been either banished from this country, or not yet allowed to enter it, but for which veterinary inspectors must always be looking out. I refer to such diseases as cattle plague, pleuro-pneumonia, rabies, epizootic lymphangitis, sheep-pox, dourine, and I think even a hypercritical public might agree to foot-and-mouth disease being included in this not unimportant list. It may be asked what length of time a man should devote to this kind of training? I think the reply is, until he feels capable of catching new ideas and methods as they rise, and competent to submit them to examination, that he may not be automatically carried away by every wind that blows, however seductive. It is certain that in this country, at least, the State veterinarian will never have the good fortune of finding a clean slate upon which to commence operations. It is therefore advisable that he should also devote a considerable amount of attention to the relative importance of good science and good administrative government, and to the necessary compromises which must often be made to make his operations accord with both.

Those whose bent decides them to train seriously as scientific investigators will have elected to pursue a course of study which is the most emancipated and attractive, but at the same time the most arduous and endless. Whatever be the subject which has stimulated you to devote yourself to it, training is to be acquired by serving periods of apprenticeship, as it were, under one or several distinguished masters. It is advisable also, that some attention should be given to teaching as a profession, since it is included in the duties of some of the appointments you may wish to obtain.

No doubt you will ask yourselves what the material prospects are for men who have studied hard to acquire special proficiency in the various branches of the veterinary profession. I would suggest to you in the first place that a feeling of greater competence, if it does not

arise merely from conceit, is worth something, and although competence may not always bring material rewards, it very frequently does.

General practice is the widest outlet, and will always absorb the greatest number of followers. Moreover, it is an open-air life, and it is the most lucrative branch of the veterinary profession. Nobody can shut his eyes, of course, to the fact that, in the cities at least, a great deal of horse traction has been replaced by motor driven vehicles. In country practice, however, the horse is by no means the only animal for which the services of veterinary surgeons are required, nor does it seem to be approaching extinction. There has certainly been a fallling off in the horse-breeding industry, as regards light horses at least, but, as you are no doubt aware, an organised movement supported by public funds is now on foot to encourage farmers to breed the still very indispensable commodity—the weight-carrying horse.

I am inclined to think that general practice is not nearly so depressed as some practitioners would have us believe, and I would point out that, although the Chancellor of the Exchequer has not seen his way to make concessions in relation to the tax on petrol used by practitioners for their magnificent motor cars, he has so far refrained from threatening the profession with an Insurance Act forcing them to treat their patients for six shillings per head per annum, medicine included.

Those who take up veterinary State medicine must look to the departmental and municipal services for employment. I doubt if it is fully realised that there are at least twelve British Colonies and Protectorates which recruit their veterinary departments exclusively from the colleges of the United Kingdom, while there are several others in which British graduates stand a good chance of employment. Some of the former departments are certainly small, and are never likely to require more than one or two officers, but the majority are considerable, or small only because they have been very recently established. Seven have come into existence in the last six years, five of which promise considerable development. I am in a position to say that at least two important principles influenced the authorities in establishing these departments, namely, that the first thing to do before settling a colony is to settle the question of its animal diseases, as far as possible, and that it would be unwise to send out any but the best qualified men available for this purpose. It is not in the Colonies and Protectorates alone, however, that the expert in State veterinary medicine is in request. At home we have the Veterinary Department of the Board of Agriculture, the chief duties of which are to control and investigate diseases of animals. I hope I may be excused if, for the purpose of accentuating the importance and permanence of organised departments of preventive veterinary medicine, I mention the fact that in the last four years foot-and-mouth disease has in mysterious ways been imported into Great Britain no less than six times, and that each outbreak was completely suppressed in little more than a week at a total cost of a few thousand pounds. This disease was imported five times during the nine months of the present year, and spread to four premises from the original outbreak. The importance of preventive medicine in Great Britain will be realised by consulting the latest returns from the Continent, which show that during August alone 37,737 outbreaks of foot-and-mouth disease were recorded in Germany; in July 12,358 were recorded in Holland; 4,097 in Belgium; and 16,027 in France; where it has been estimated that the loss will amount to over fifteen millions sterling.

In addition to those diseases which are already scheduled, and for dealing with which the services of specially trained veterinary surgeons are required, there are others of the first importance, notably Johne's disease, epizootic abortion, and tuberculosis. These only await the final ripening process of public opinion to add them to the list. They are not diseases, the prevalence of which is the least likely to be influenced by ordering an extra few hundred cubic feet of air space. Progress will only be effected by reporting, followed by skilful diagnosis, and tracing up the sources of infection with the view of suppressing them, and such work can only be done well by specially trained veterinarians.

I am not going to commit the indiscretion of prediction, but I would observe that the view that the Diseases of Animals Committees of the County Councils should have at their exclusive command the advice and other services of veterinarians specially trained in State Veterinary Medicine, has so much to commend it that it is possibly not very far off consummation.

I have left the largest Department, the Army Veterinary Service, to the last, because in this case special knowledge of preventive medicine is not the sole professional recommendation. I understand, however, that special qualifications of this kind are regarded with no small favour.

In the world of veterinary investigation and research there is ample room for numerous devotees. Veterinary pathology has attracted a few men, but too few to devote their professional lives to its study. Physiological investigation has been almost severely left alone by British veterinarians. The services of veterinary helminthologists are urgently required in the interests of agriculture, and veterinarians with special training and skill in this branch of their profession would be practically sure of employment. Of course it has to be admitted that the prolongation of the period of unremunerative work consequent upon training increases considerably the cost of education. It is difficult to believe, however, that poverty alone, on the part of parents at least, has been the cause of so few graduates training in veterinary science as distinct from practice; but I would like to draw your attention to the material assistance which the Board of Agriculture, from money allocated from the Development Fund, offer to promising graduates who desire to train seriously as investigators. Twelve scholarships of the value of £150 a year for three years will be offered in each of the years 1911, 1912, and 1913. Veterinary graduates of distinction will be eligible for such scholarships: which, it should be noted, will not be awarded to enable the recipient to work for degrees by examination, but to train as investigators. This, however, is not all: under the same scheme for the development of agricultural research and investigation funds will be available to enable certain institutions to maintain workers on specified subjects, some of which are veterinary, and, undoubtedly, there will be a more assured future than heretofore for those whose qualifications deserve recognition. There has never been a time in the history of veterinary medicine in this country, when the prospects seemed so encouraging for those who elect to devote themselves seriously to preventive medicine or to research. I think I might also say that there is no branch of the profession you have chosen which is in the least overcrowded. Small as our numbers are, however, I feel sure that as a profession we will do our best to play up to what new opportunities have been given us, and to make our response a good argument upon which to base demands for more.

To come back now to the all-important question of What are you going to do when you are qualified? May I advise you, while giving the fullest consideration to what men of knowledge and experience have to say, that the process of making up your minds should, in no sense, be a passive one.

The CHAIRMAN in proposing a hearty vote of thanks to the the lecturer, said portions of the old question of veterinary education had been discussed in the address, but it had struck him that Mr. Stockman had sounded an original note; and he certainly had shown the value to a student of a post-graduate course, not only in the direction of better mental knowledge, but also in regard to financial reward. Mr. Stockman had pointed out that there were openings abroad and in this country under the State and Municipalities, in all of which the man who had taken the post-graduate course had the better position. He (the Chairman) thought that the lecturer might even have laid more stress on the fact that such a course gave a student a wider basis educationally, with the result that he took double the interest in his work.

Most people, he supposed, had regretted the fact that they had not received as much education as they ought to have done—not at the time; probably they objected to it then, but in the later years that fact came home to them. The majority of men had to take their children away from school at seventeen, and if a boy was away from Polytechnics or other extra educational establishments, he had not sufficient basis for the rest of his education. The lecturer had touched upon that point, and it struck him (the Chairman) as being a very important one. Mr. Stockman also asked the question, How long should a man pursue his post-graduate course? and in reply stated, Just as long as was necessary to make him an exact man, capable of understanding things more thoroughly than he otherwise would. Being an exact man was simply being a scientific man. He asked all present to give a hearty vote of thanks to Mr. Stockman.

The vote was carried with acclamation.

Mr. STOCKMAN, in acknowledging the vote, said it gave him great pleasure to receive the vote. If his few remarks ever came to be of any use, he would be still more pleased.

Principal Sir JOHN M'FADYEAN, in announcing the list of awards, said that on a former occasion similar to the present, he had suggested that before long it might become impossible for the Governors to award the Coleman prizes in accordance with the wishes of the testator. The prizes were at present awarded on the results of special knowledge shown by candidates regarding three subjects:—in the diseases of the horse's eye, diseases of the horse's foot, and glanders. On the occasion when he previously referred to the contingency, he said the time might come when there would be no glanders in this country, and that it would then be, perhaps, unreasonable to expect teachers to be able to train students adequately regarding that disease, or to expect students to have an extensive knowledge of glanders. He was happy to say, speaking now two years later, he could with much greater confidence predict that the time was not very remote when there would be no glanders in this country. That statement did not appear to have received the approbation he had expected. But, although during the past session cases of glanders had not been quite so numerous as in the past, the opportunity would no doubt be continued of teaching students practical connection with glanders during the coming session.

PRIZE LIST.

Coleman Prizes—Silver medal: Mr. J. T. Edwards; Bronze medal: Mr. G. F. Steevenson; Certificate of Merit: Mr. H. E. Hornby.

Centenary Prizes.—Class A: Mr. F. J. Andrews; Class B; Mr. H. W. Dawes; Class C: Mr. R. H. Knowles; Class D: Mr. G. F. Steevenson.

Royal Agricultural Society's Medals.—Silver medal: Mr. J. T. Edwards; Bronze medal: Mr. G. F. Steevenson.

Ralli Prizes in Practical Surgery.—1st Prize, £5 5s. Mr. F. E. Heath; 2nd Prize, £3 3s.: Mr. J. T. Edwards; 3rd Prize, £2 2s.: Mr. W. P. Stokes.

Clinical Prizes.—Class A.—1st Prize: Mr. E. E. Jelbart; 2nd Prize: Mr. W. H. Wortley; 3rd Prize: *æq.* Messrs. F. H. Stanton, C. H. S. Townsend.

Class B.—1st Prize: Mr. H. Hicks; 2nd Prize: *æq.* Messrs. W. H. Priston, R. H. Stalker; 3rd Prize: Mr. W. B. Howe.

Class C.—1st Prize: Mr. E. B. Reynolds; 2nd Prize: Mr. S. J. Gilbert; 3rd Prize: Mr. W. F. Morton.

Class D.—1st Prize: Mr. C. Holland; 2nd Prize: Mr. J. T. Edwards; 3rd Prize: Mr. G. F. Steevenson.

Class Prizes.—Class D.—Veterinary Medicine: 1st Prize: Mr. C. Holland; 2nd Prize: *æq.* Messrs. J. T. Edwards, G. F. Steevenson. Surgery: 1st Prize: Mr. G. F. Steevenson; 2nd Prize: Mr. J. T. Edwards.

Class C.—Pathology: 1st Prize: Mr. S. J. Gilbert; 2nd Prize: Mr. R. H. Knowles. Hygiene: 1st Prize: Mr. R. H. Knowles; 2nd Prize: Mr. S. W. Marriott. Materia Medica: 1st Prize: Mr. R. H. Knowles; 2nd Prize: Mr. W. F. Morton.

Class B.—Anatomy: 1st Prize: Mr. H. W. Dawes; 2nd Prize: Mr. J. M. Penhale. Histology: 1st Prize: Mr. W. B. Howe: 2nd Prize: Mr. H. W. Dawes. Physiology: 1st Prize: Mr. H. W Dawes; 2nd Prize: Mr. W. B. Howe.

Class A.—Chemistry and Toxicology: Biology: Minor Anatomy: 1st Prizes: Mr. F. J. Andrews; 2nd Prizes: Mr. F. H. Stainton. Practical Chemistry: 1st Prize: Mr. W. H. Wortley; 2nd Prize: Mr. H. H. Curson. Physics. 1st Prize: Mr. R. W. D. Easom; 2nd Prize Mr. F. J. Andrews.

On the motion of Col. Duck, a hearty vote of thanks was accorded to the Chairman for presiding, and the proceedings terminated.

The Tuberculin Test in Cattle.

In the *Illinois State Register* of August 9th, the views of Dr. James A. Egan, the Secretary of the Illinois State Board of Health, are stated in regard to the use of the test in cows. Dr. Egan commences by conceding that when intelligently and properly applied by a person skilled in its use, and with a working knowledge of diseases of cattle, the test is one of the best means of diagnosing tuberculosis in cows, but he affirms that he is opposed to its indiscriminate application. His chief objections are that it is positive in the presence of the slightest infections which may never spread to the udder, and that it may, on the other hand, be negative and fail to disclose a case of generalised tuberculosis in which tubercle bacilli are being passed in the milk. He is therefore of opinion that dependence on this test may lull authorities and the public into a sense of false security, and he urges the wisdom of examination by competent veterinarians to discover disease, to enforce cleanliness, and to order the segregation of animals clinically tuberculous or with suspicious abnormality of the udders. A large amount of evidence has now accumulated in regard to the uses aud limitations of the tuberculin test both in man and animals. It is generally recognised that the test may be negative in miliary tuberculosis, in advanced cases, and in tuberculous meningitis, and that it may be positive in quiescent or clinically inactive lesions. It is, moreover, obviously inapplicable when there is fever. In spite of these limitations it is a useful test, and, according to Mohler in a Bulletin presented to the Public Health and Marine Hospital Service of the United States in 1908, it affords accurate diagnosis in 97 per cent. of cases in cattle. We agree with Dr. Egan that it would be unwise to rely

upon this test only and we endorse his plea for intelligent and skilled examanination of the cows as well, but if the test were carried out by competent veterinarians this would be ensured. We do not agree that the physical examination should alone be relied on to the exclusion of the tuberculin test or that only clinically tuberculous cows should be excluded. The ultimate object of hygienic measures in regard to the milk-supply is the eradication of the disease, and it is generally admitted that this is not easy to recognise in cattle in the early stages by physical examination only. It is also important to note that the experiments of the Royal Commission on Human and Animal Tuberculosis proved that bacilli may be present in the milk of cows with tuberculosis but showing no evidence of disease of the udders. —*The Lancet.*

Flies and Infection.

A fourth report on flies as carriers of infection issued recently by the Local Government Board contains a continuation of Dr. Graham-Smith's experimental work on the relation of flies to bacteria, an investigation of their relation to parasitic worms by Dr. Nicoll, and a series of observations on the flight of flies by Dr. Copeman and others.

Dr. Nicoll's report deals with the transmission of the eggs of parasitic worms through the agency of house-flies. The only investigations recorded of any importance were made in Italy nearly thirty years ago by Grassi, and twenty-three years later by Grassi, and twenty-three years later by Calandruccio. Their observations left little doubt that the fly was an extremely probable agent in the dispersal of certain worms—notably *Hymenolepsis nana* and *Trichocephalus dispar*. They also showed that the eggs were carried in the intestine of the fly and deposited in its excrement. Dr. Nicoll's work yields ample confirmation of these conclusions, and brings ont several new points. Both he and Graham-Smith remark upon the fly's habit of cleansing itself. This apparently hygienic procedure might at first commend itself, but, although it serves to get rid of gross contamlnation, it results in a renewed infection of the legs and body from the proboscis. Nicoll sums up the general facts which are known in regard to the life-history and mode of transmission of parasitic worms and the characters of their eggs. The size of the latter appears to be the most important factor in their relation to flies, for the ordinary house-fly is unable te swallow particles exceeding 50 *u* in diameter. This fixes a limit to the size of egg which can be ingested, and, as many parasites produce eggs exceeding this size in one or both diameters, they must be much less likely to be disseminated by flies. The experiments were conducted chiefly with the tapeworms, *Hymenolepsis diminuta* and *Tænia serrata*. The former produces eggs exceeding the limit; the latter much under. It was found that the eggs of *Tænia serrata* could be ingested in hundreds, that they might remain in the intestine of the fly for two or three days without being destroyod, and that, when deposited, they retained their infectivity. It was further noted that fæces containing tapeworm segments afforded flies the opportunity for contaminating food for at least a fortnight after exposure. With regard to the conveyance of eggs on the external surface of flies, although this was demonstrated several times even in the case of such large eggs as those of *Hymenolepsis diminuta*, Nicoll is evidently not inclined to attach such far-reaching importance to this mode of transmission as to that by the intestine, and in this respect he is in agreement with Graham-Smith in the case of bacteria. It is obvious that, where foodstuffs and infective excremental matter are separated by no great distance, external conveyance is the most ready means of transmission.—*B. M. J.*

DISEASES OF ANIMALS ACTS 1894 TO 1910, SUMMARY OF RETURNS.

Period.	Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders (including Farcy) Outbreaks	Glanders (including Farcy) Animals.	Counties Affected Animals Attacked	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended Sept. 30	20		24		1	16	4	21		1	33	374
Corresponding week in 1910		17		17			8	22		2	28	234
Corresponding week in 1909		25		31			15	36		2	15	201
Corresponding week in 1908		17		22			22	47	London 18	4	41	260
Total for 39 weeks, 1911	648		803		9	441	152	367	Middlesex 3	311	1921	22347
Corresponding period in 1910		1081		1289	2	15	288	861		350	1090	9864
Corresponding period in 1909		986		1310			420	1500		476	1323	11987
Corresponding period in 1908		820		1092	3	112	635	1932		647	1593	9400

Board of Agriculture and Fisheries, Oct. 3 1911.

Period.	Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders (including Farcy) Outbreaks	Glanders (including Farcy) Animals.	Parasitic Mange (outbreaks) Animals Attacked	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
IRELAND. Week ended Sept. 30	...	...	...	...	...	...	...	...	...	4	2	57
Corresponding Week in 1910 ...	...	...	...	...	...	...	...	...	2	6	...	1
Corresponding Week in 1909 ...	...	...	...	...	...	...	...	...	...	2	...	48
Corresponding Week in 1908 ...	...	...	...	...	...	...	...	...	1	4	..	...
Total for 39 weeks, 1911 ...	7	14	...	...	2	3	52			265	104	1765
Corresponding period in 1910 ...	5	8	...	...	1	2	60			364	73	1708
Corresponding period in 1909 ...	6	6	...	...	...	...	67			309	86	1561
Corresponding period in 1908 ...	7	10	...	...	...	...	33			281	141	3247

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 2, 1911

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, Sept. 28.

SPECIAL RESERVE OF OFFICERS.
ARMY VETERINARY CORPS.

W. J. E. McKenzie to be Lieut. (on probation). Dated Oct. 4.

OBITUARY.

JOHN BRIGHAM, M.R.C.V.S., Pocklington, Yorks.
Graduated, New, Edin: April. 1887.

Mr. Brigham died at his residence on Sept. 22nd, from Broncho-pneumonia. Aged 60 years.

J. KNOWLES, V.S., Murrow, Wisbech, Cambs., died on Sept. 27, from cerebral apoplexy. Aged 73 years.

CORRESPONDENCE.

UNUSUAL SKIN AFFECTION IN CATTLE.

Sir,

I was much interested in the cases of skin affection described by Mr. Hills in *The Veterinary Record* of September 30th. Evidently the outbreak is similar in many respects to the disease that exists in the South of Ireland. As I am now treating a typical case in a milch cow close to town I have a better opportunity of observing the course of the disease than on other occasions. This animal shows in addition to the lesions at the back of the knees, an eruption over the neck and shoulders. This eruption is in the form of small, hard papules which have a "shotty" feel, these develop into pustules, and after a time "scab" over, and a smooth surface is left when the scab falls off or is removed. The lesions at the back of the knees were very severe, the skin sloughed off in a large patch, and an extensive unhealthy surface resulted, with little tendency to heal. Small ulcerated patches also occurred at the posterior aspect of the metacarpal region.

The owner informed me that the first appearance of the disease observed was at the back of the knees, in the form of similar pustules to those now present on the neck and shoulders.

I may mention that ointments or liniments of any kind seem to aggravate the condition, an application of oxide of zinc and boric acid gives the best results. I need scarcely point out the difficulty in treating a large number of young cattle, as the procedure of catching them is by no means easy, nor is it relished by the owners.

The disease is now prevalent in various districts, and unless the animals are cured before cold, wet weather sets in it is likely that complications will arise, and considerable loss will result. Cattle suffering from the affection will not be purchased at either fairs or markets, once the public get to know its contagious nature.—Yours etc.,

E. WALLIS HOARE.

Sir,

I was very interested to read in *The Veterinary Record* of Sept. 23rd Mr. Wallis Hoare's article on "An unusual skin affection in cattle," as I have met with several such cases this summer.

The animals chiefly affected have been dairy cows, the majority of which were Jerseys, but at one farm several Devon bullocks were affected, at another several Jersey calves, and these at first gave one the impression they were suffering from ringworm; at another farm a Dutch bull was affected in both hind legs.

The symptoms described by Mr. Wallis Hoare are like those I met with, and nearly always the back of knees was the first place noticed, but soon the skin between the knee and the fetlock was affected causing great irritation and swelling of the legs; the animal walked very stiffly, and when lying, did so with its legs extended. The Dutch bull had both hind legs affected nearly up to the stifles. The calves were affected on the legs, but there were also various circular patches over the the body denuded of hair, just like ringworm, in fact I was called in to attend them for this; the patch differed from ringworm in that the patch of dead hair and skin could be pulled clean off. I do not consider it is contagious, and I believe the whole trouble is caused by flies. Eczema breaks out at the back of the knees, and is increased by the cows constantly licking the parts—scores of flies continue to settle on the sores and so make matters worse. The back of the knees seems to be a favourite spot for flies, and I must confess that I have never before seen the animals tormented by flies so much as I have this year.

The treatment I adopted was first to prevent the animal licking the sores, and to keep the flies away; this I did by putting on a cradle and in bad cases putting the animal into "trousers"; in ordinary cases the cow's legs had to be syringed with a disinfectant solution before they would stand still to be milked. An aperient if necessary, and an astringent, antiseptic ointment applied twice a day seemed to be sufficient, and in about three weeks they were right again. The cows were kept in during the day and turned out at night.

I have seldom before met with similar cases and certainly have not had them so bad nor had so many affected as during this exceptional summer. It would be interesting to hear the experience of others.—Yours faithfully,

WALTER W. GOLDING, M.R.C.V.S.

Hertford, Oct. 4.

Sir,

During the last fortnight I also have had a similar case of skin affection in cattle, as described by Mr. Wallis Hoare in *The Veterinary Record* of Sept. 23rd.

Four steers were affected in a herd of eighteen; they were two years old and showed precisely the same symptoms: swollen knees and arms, with an angry, painful scaling of the skin from the back of the knees down to the fetlock joints. When made to move they walked very sore upon their toes, and when recumbent they showed great disinclination to rise. Eventually a deal of sloughing took place. They were turned out in a field through which a stream runs, and I put the cause down to their standing so much in the water this season.

I found that an aperient, with emollient liniment: afterwards an healing dressing to the sloughs has been sufficient to effect a cure.—Yours truly,

FREDK. AIREY, M.R.C.V.S.

Biggleswade, Beds. Oct. 4.

DISEASE IN PIGS—ANOTHER ENQUIRY.

Sir,

I notice an enquiry in *The Record* for Sept. 30th ult. as to a disease of young pigs, the symptoms of which were simply those of extreme peeling of the skin, and which in every instance ended fatally. This note is not intended as an answer, but simply as a supplemental enquiry.

A short while ago, I visited two litters of very young pigs which appeared to be affected with a similar disease. They all showed extreme erythema and peeling of the skin and, in addition, the usual signs of fever: thirst, etc., but no marked diarrhœa or other symptoms. On making a post-mortem examination of one of them, I discovered no unusual lesions. The stomach contents were more or less normal, and the bowel contents were of the nature of soft putty, and somewhat slate-coloured, but there were no signs of gastritis or enteritis—ulcerative or otherwise.

I may remark that the sows had been partly fed on boiled fish offal, but I am not aware that this, through the medium of the milk, should make any difference to the health of young pigs. Moreover, both the sows appeared to be quite well, though all the youngsters died.—Yours truly,

M.R.C.V.S.